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(54) **RAPID TERRAIN MODEL GENERATION WITH 3-D OBJECT FEATURES AND USER CUSTOMIZATION INTERFACE**

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(57) **ABSTRACT**

A method and system **5** for generating a three-dimensional world model for simulated real terrain optimized for a personal computer. Terrain data and other environmental data are acquired from at least one of a plurality of digital data sources **9** through an acquisition step **20** and the acquired data are processed in a transformation and formatting step **25** to construct a predetermined intermediate database format **30**, from which intermediate database, in response to a user query **40**, introduced through a query interface program **45** that is visible on a personal computer monitor **11**, the data are further extracted, processed and composited in a formatting step **32** to create a three-dimensional world model file **35**. The 3-D world model format **35** is optimized for a particular imaging system, preferably a browser that renders standard Virtual Reality Modeling Language 2.0 specification files, that allows the 3-D model to be viewed and navigated on the computer monitor **11**. In formatting step **32** the terrain surface can be colored and textured automatically by the system corresponding to geographic database layers, and natural and man-made structures can be made to populate the terrain skin as 3-D objects in the composited world model **35**. The method and system **5** allow a personal computer user to query the system for any geographic location for which source data are available and to adjust the geographic extent of the 3-D world **35** per the user's preference aided by expert system guidance.

33 Claims, 5 Drawing Sheets